UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/750,618	12/04/2000	Mike Boucher	7720.103728(MMCD20)	6550

			EXAMINER
23859	7590	03/15/2005	FLANDERS, ANDREW C

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ART UNIT	PAPER NUMBER
2644	

DATE MAILED: 03/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/750,618	BOUCHER ET AL.
	Examiner	Art Unit
	Andrew C Flanders	2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>04 December 2000</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-21</u> is/are pending in the application.
   4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1-21</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>04 December 2000</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.
   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a)☐ All   b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
         application from the International Bureau (PCT Rule 17.2(a)).
   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date <u>25 August 2003</u>.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2.   Claims 1, 2, 4, 5, 7, 9 –11, 13, 15 and 20 are rejected under 35 U.S.C. 102(b) as

being anticipated by Terui (U.S. Patent 5,903,871).

3.   Regarding Claims 1 and 2, Terui discloses an audio playback device with a flash

memory card which is used as a recording medium (col. 9 line 24) (i.e. storing data

representing a preset tone pattern into the memory element), a memory card controller

(first processor) functioning as a memory card controlling means that controls the

memory card when a proper address signal is supplied from the system controller to

read out the recorded data and supply it to the DSP (second processor) (col. 9 lines 17

– 23) (i.e. and accessing the memory element with the first processing unit and

obtaining a first portion of the preset tone pattern data and providing the first portion of

the preset tone pattern data obtained by the first processing unit to the second

processing unit), and the DSP decompresses the data and transfers it to the D/A

converter for playback (col. 9 lines 27 – 34) (i.e. the second processing unit providing a

playback of the first portion of the preset tone pattern data).

4.   Regarding Claim 4, in addition to the elements stated above regarding claim 2,

Terui discloses playing back a saved digital signal (col. 9 lines 23 – 33) (i.e. providing a

playback of the audio sequence).

5.   Regarding Claim 5, in addition to the elements stated above regarding claim 4,

Terui discloses an operating portion that includes user operable commands such as

stop, play, forward and reverse (Fig. 1 element 19) and the recording medium and the

address control circuit are coupled to the main control circuit, the main control circuit

provides an appropriate address signal (interrupt signal) to the address control circuit in

accordance with the operation of the operating portion (indicator) and reading out the

data from the recording medium to provide it to the DSP (col. 4 lines 50 – 60) (i.e.

receiving an indicator at the first processing unit, the indicator requiring processing of an

intervening tone pattern of the plurality of tone patterns, in response to receiving the

indicator at the first processing unit, providing an interrupt signal to the second

processing unit, in response to receiving the interrupt signal at the second processing

unit, interrupting the playback of the audio sequence), a memory card controller (first

processor) functioning as a memory card controlling means that controls the memory

card when a proper address signal is supplied from the system controller to read out the

recorded data and supply it to the DSP (second processor) (col. 9 lines 17 – 23) (i.e.

and accessing the memory element with the first processing unit to obtain data

representing a first portion of the intervening tone pattern of the plurality of preset tone

patterns and providing the data representing the first portion of the intervening tone

pattern of the plurality of the preset tone patterns to the second processing unit), and

the DSP decompresses the data and transfers it to the D/A converter for playback (col. 9 lines 27 – 34) (i.e. the second processing unit converting the data representing the first portion of the intervening tone pattern of the plurality of preset tone patterns into an audio sequence) and playing back a saved digital signal (col. 9 lines 23 – 33) (i.e. providing the playback of the audio sequence).

6.   Regarding Claim 7, Terui discloses an audio playback device with a flash memory card which is used as a recording medium (col. 9 line 24) (i.e. storing data representing a preset tone pattern into a first memory element accessible by the first processing unit), an operating portion that includes user operable commands such as stop, play, forward and reverse (Fig. 1 element 19) (i.e. detecting an event that requires the playback of an audio sequence), a memory card controller (first processor) functioning as a memory card controlling means that controls the memory card when a proper address signal is supplied from the system controller to read out the recorded data and supply it to the DSP (second processor) (col. 9 lines 17 – 23) (i.e. reading a first portion of the preset tone pattern data from the first memory element) and before the DSP processes the data are temporally stored in an I/O buffer (Fig. 1 element 7) (i.e. storing the first portion of the preset tone pattern data into a first section of the shared memory element and the second processing unit accessing the first portion of the shared memory element to retrieve the first portion of the preset tone pattern data), and the DSP decompresses the data and transfers it to the D/A converter for playback (col. 9 lines 27 – 34) (i.e. converting the preset tone pattern data into an audio sequence).

7.   Regarding Claim 9, Terui discloses an audio playback device with a flash

memory card that is used as a recording medium (col. 9 line 24) (i.e. storing data

representing a tone pattern into the memory element), a memory card controller (first

processor) functioning as a memory card controlling means that controls the memory

card when a proper address signal is supplied from the system controller to read out the

recorded data and supply it to the DSP (second processor) (col. 9 lines 17 – 23) (i.e.

accessing the memory element with the first processing unit and obtaining the tone

pattern data and providing the tone pattern data obtained by the first processing unit to

the second processing unit) and the DSP decompresses the data and transfers it to the

D/A converter for playback (col. 9 lines 27 – 34) (i.e. the second processing unit

providing a playback of tone pattern data).

8.   Regarding Claim 10, in addition to the elements stated above regarding claim 9,

Terui discloses an audio playback device with a removable (external) flash memory

card that is used as a recording medium (col. 9 line 24) (i.e. accessing the external

source to obtain the tone pattern).

8.   Regarding Claims 11 and 15, Terui discloses a memory card controller (first

processor) functioning as a memory card controlling means that controls the memory

card (col. 9 lines 17 – 23) (i.e. a host processing unit coupled to a first memory

element), a DSP that processes the audio data that is temporally stored in an I/O buffer

(Fig. 1 element 7 and col. 9 lines 16 – 30) (i.e. a supplemental processing unit coupled

to a second memory element), a system controller connected to both the DSP and the

memory card controller (Fig. 6 elements 35, 36, and 37) (i.e. an interface means

between the host processing unit and the supplemental processing unit), a memory

card that is used as a recording medium (col. 9 line 24) (i.e. the host processing unit

being operative to store data representing a tone pattern into the first memory element),

an operating portion that includes user operable commands such as stop, play, forward

and reverse (Fig. 1 element 19) (i.e. detect an event that requires the playback of an

audio sequence), the memory card controller (first processor) functions as a memory

card controlling means that controls the memory card when a proper address signal is

supplied from the system controller to read out the recorded data and supply it to the

DSP (second processor) (col. 9 lines 17 – 23) (i.e. read at least a portion of the tone

pattern data from the first memory element, and provide the at least a portion of the

tone pattern data to the supplemental processing unit through the interface means and

the supplemental processing unit being operative to receive the at least a portion of the

tone pattern data) and the DSP decompresses the data and transfers it to the D/A

converter for playback (col. 9 lines 27 – 34) (i.e. convert the at least a portion of the tone

pattern data into an audio sequence).

9.   Regarding Claim 13, in addition to the elements stated above regarding claim 11,

Terui further discloses a system controller connected to both the DSP and the memory

card controller (Fig. 6 elements 35, 36, and 37) (i.e. wherein the interface means is an

electronic connection between the host processing unit and the supplemental

processing unit).

10.   Regarding Claim 20, Terui discloses a memory card controller (first processor)

functioning as a memory card controlling means that controls the memory card when a

proper address signal is supplied from the system controller to read out the recorded

data and supply it to the DSP (second processor) (col. 9 lines 17 – 23) (i.e. providing a

first segment of tone to the supplemental processing unit), an operating portion that

includes user operable play command (Fig. 1 element 19) (i.e. setting a start status, the

start status causing the supplemental processing unit to begin processing the tone data

at the beginning), an operating portion that includes user operable stop command (Fig.

1 element 19) (i.e. setting a stop status, the stop status causing the supplemental

processing unit to stop processing the tone data at the current location) and an

operating portion that includes user operable pause command (Fig. 1 element 19) (i.e.

setting a loop status, the loop status causing the supplemental processing unit, in

response to processing a stop sequence event or a loop sequence event, to resume

processing the tone data at the beginning).

Claim Rejections - 35 USC § 103

11.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

12.   Claims 3, 6, 8, 12, 14 and 17 - 19 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Terui (U.S. Patent 5,903,871).

13.   Regarding Claim 3, in addition to the elements stated above regarding claim 2,

Terui further discloses when a proper address signal is supplied from the system

controller the system will read out the recorded data and supply it to the DSP (col. 9 lines 19 – 23). It is well known and obvious in the to include a signal that could be one indicating completion or readiness for another segment without the excise of inventive skill. (i.e. providing an indicator to the first processing unit when the second processing unit has completed converting the first portion of the particular one of the plurality of preset tone patterns, and accessing the memory element with the first processing unit to obtain data representing a next portion of the particular one of the plurality of preset tone patterns).

14.   Regarding Claim 6, in addition to the elements sated above regarding claim 5, Terui discloses that the main control circuit provides an appropriate address signal to the address control circuit in accordance with the operating portion to read out data from the recording medium to provide it to the DSP for playback (col. 4 lines 49 – 60) and an operating portion that includes user operable commands such as stop, play, forward, pause and reverse (Fig. 1 element 19). It is well known and obvious in the art to include functionality to resume playback after playback had been interrupted (i.e. resuming the playback of the particular one of the plurality of tone patterns upon completing the playback of the audio sequence for the intervening tone pattern).

15.   Regarding Claim 8, Terui discloses an audio playback device with an operating portion that includes user operable commands such as stop, play, forward and reverse (Fig. 1 element 19) (i.e. detecting an event that requires the playback of an audio sequence), a memory card controller (first processor) functioning as a memory card controlling means that controls the memory card when a proper address signal is

supplied from the system controller to read out the recorded data and supply it to the

DSP (second processor) (col. 9 lines 17 – 23) (i.e. providing a first portion of data

representing a preset tone pattern to the second processing unit) and the DSP

decompresses the data and transfers it to the D/A converter for playback (col. 9 lines 27

– 34) (i.e. the second processing unit sequentially converting the preset tone pattern

data into an audio sequence). It is well known and obvious in the art to include a signal

that could be one indicating completion or readiness for another segment without the

excise of inventive skill. (i.e. providing an indicator to the first processing unit when a

second portion of data representing the preset tone pattern is required).

16.   Regarding Claim 12, in addition to the elements stated above regarding claim 11,

Terui further discloses voice data is supplied from the memory card to the DSP through

the system controller (col. 9 lines 16 – 20). It is well known and obvious to one of

ordinary skill in the art that the data while being passed through a controller/processor, it

is stored at some point (i.e. wherein the interface means is a shared memory element

that the host processing unit and the supplemental processing unit can access).

17.   Regarding Claim 14, in addition to the elements stated above regarding claim 11,

Terui does not disclose expressly an wireless interface. However, Examiner takes

Official Notice that wireless interfaces are well known in the art. It would have been

obvious to one of ordinary skill in the art at the time of the invention to use a wireless

interface to increase portability and still maintain reliable connectivity.

18.   Regarding Claims 17, 18 and 19, Terui discloses that the audio data is

compressively transformed to data in a predetermined format. Terui does not disclose

expressly using MIDI, MP3 or WAV formats. However, Examiner takes Official Notice

that these compression formats are well known in the art. It would have been obvious

to one of ordinary skill in the art to use any one of these audio formats on Terui's player.

MP3, MIDI and WAV are merely three of many straightforward implementations that one

of ordinary skill in the art would have been able to use without the excise of inventive

skill.

19.   Claims 16 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Terui (U.S. Patent 5,903,871) in view of Tng (U.S. Patent 6,065,104).

20.   Regarding Claim 16, in addition to the elements stated above regarding claim 15,

Terui discloses the main control circuit provides an appropriate address signal to the

address control circuit in accordance with the operation of the operating portion to

provide data to the DSP (col. 4 lines 50 – 59) (i.e. controlling the operation of the

supplemental processing unit by setting and resetting bits in the control register) and a

flash memory card that is used as a recording medium (col. 9 line 24). Terui does not

disclose storing the first portion of the tone data into a selected page of the two memory

pages. Tng discloses a memory with multiple pages for storing audio data (fig. 3A) (i.e.

storing the first portion of the tone data into a selected page of the two memory pages).

One of ordinary skill in the art at the time of the invention would have been motivated to

use Tng's memory paging on Terui's playback device to reduce playback latency. Tng

discloses that "the time delay incurred by the Peripheral Processor while waiting for the

page address translation entry to be delivered can be substantial, thereby negatively

affecting overall system performance. For peripheral processing units such as audio or

graphics accelerators, this increased latency for page address translation entry access

results in unacceptable performance for updating computer displays or outputting audio

signals through a loudspeaker to a user."

21.   Regarding Claim 21, Terui discloses the main control circuit provides an

appropriate address signal to the address control circuit in accordance with the

operation of the operating portion to provide data to the DSP (col. 4 lines 50 – 59), an

operating portion that includes user operable play command (Fig. 1 element 19) (i.e. a

START_BIT, whereby when the START_BIT is in a first state, the supplemental

processing unit will begin processing the tone data at the beginning), an operating

portion that includes user operable stop command (Fig. 1 element 19) (i.e. a

STOP_BIT, whereby when the START_BIT is in a first state, the supplemental

processing unit will stop processing the tone data at the current location), an operating

portion that includes user operable paud command (Fig. 1 element 19) (a LOOP_BIT,

whereby when the LOOP_BIT is in a first state and the supplemental processing unit is

processing a stop sequence even or a loop sequence event, the supplemental

processing unit will resume processing the tone data at the beginning of the first

memory page), and when the play button is pressed voice reproduction occurs

continuously (fig 18 elements S98 and S99). Terui does not disclose a first and second

memory page for receiving tone data from the supplemental processing unit. Tng

discloses a memory with multiple pages for storing audio data (fig. 3A) (i.e. a first

memory page for receiving tone data from the supplemental processing unit and a

second memory page for receiving tone data from the supplemental processing unit)

and (i.e. a BOUNDRY_STATUS, whereby when the supplemental processing unit completes processing the tone data in a first memory page and begins to process the tone data in the second memory page, the BOUNDRY_STATUS is set to a first value and when the supplemental processing unit completes processing the one data in the second memory page and begins processing the tone data in the first memory page, the BOUNDRY_STATUS is set to a second value).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C Flanders whose telephone number is (703) 305-0381. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (703) 305-4040. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

acf

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SUPERVISORY PATENT EXAMINER